

5 What is claimed is:

1. A method of generating an On-Line Analytical Processing (OLAP) query,
comprising:
 providing a query object capable of supporting a plurality of OLAP servers,
10 each of the OLAP servers using a different structured query format;
 determining an OLAP server from among the plurality of OLAP servers for
which the query will be executed based upon a property of the query object; and
 processing the query object to generate a query statement using the structured
query format corresponding to the OLAP server determined.
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2. The method of claim 1, wherein the OLAP server is determined from a group
of OLAP servers including Microsoft Analysis Services OLAP server and Hyperion
Essbase™ OLAP server.
- 20 3. The method of claim 2, wherein the query statement is generated using the
Multi-Dimensional Expression (MDX) query format when the property of the query
object indicates Microsoft Analysis Services OLAP server.
4. The method of claim 3, wherein processing the query object includes
25 generating a *select* clause and a *from* clause from the query object, and combining
the *select* clause and the *from* clause to generate the query statement.
5. The method of claim 3, wherein processing the query object includes
generating a *select* clause, a *from* clause, and a *with* clause from the query object, and
30 combining the *with*, *select* and *from* clauses to generate the query statement.

- 5 6. The method of claim 3, wherein processing the query object includes
generating a *select* clause, a *from* clause, and a *where* clause from the query object,
and combining the *select*, *from* and *where* clauses to generate the query statement.
7. The method of claim 3, wherein processing the query object includes
10 generating a *select* clause, a *from* clause, and an *order by* clause from the query
object, and combining the *select*, *from* and *order by* clauses to generate the query
statement.
8. The method of claim 2, wherein the query statement is generated using the
15 Report Scripts (RS) query format when the property of the query object indicates
Hyperion Essbase™ OLAP server.
9. The method of claim 8, wherein processing the query object includes
generating a *header* specification, an *axis* specification and an *execute* specification
20 from the query object, and combining the *header*, *axis* and *execute* specifications.
10. The method of claim 8, wherein processing the query object includes
generating a *header* specification, an *axis* specification, a *member* specification, and
an *execute* specification from the query object, and combining the *header*, *axis*,
25 *member* and *execute* specifications to generate the query statement.
11. The method of claim 8, wherein processing the query object includes
generating a *header* specification, an *axis* specification, an *expression* specification,
and an *execute* specification from the query object, and combining the *header*, *axis*,
30 *expression* and *execute* specifications to generate the query statement.

5 12. The method of claim 1, wherein the query object property supports at least three OLAP servers, each of the OLAP servers using a different structured query format.

13. An apparatus for generating an OLAP query using a query object capable of
10 supporting a plurality of OLAP servers, each of the OLAP servers using a different structured query format, the apparatus comprising:

means for determining, based upon a property of the query object, an OLAP server from among the plurality of OLAP servers; and

means for processing the query object to generate a query statement using the
15 structured query format corresponding to the OLAP server determined.

14. The apparatus of claim 13, wherein the query object is capable of supporting the Microsoft Analysis Services OLAP server and Hyperion Essbase™ OLAP server, and the means for processing generates an MDX query statement and an RS query
20 statement when the property indicates that the OLAP server is a Microsoft Analysis Services OLAP server and an Hyperion Essbase™ OLAP server, respectively.

15. The apparatus of claim 13, wherein the query object is capable of supporting at least three OLAP servers which each uses a different structured query format, and
25 the means for processing generates the query statement using one of the at least three formats.

16. An OLAP query generation engine, comprising:
a query object model, the query object model including a data structure which
30 models an OLAP query; and
a programming interface for generating an OLAP query statement from the query object model according to a structured query format specified by the query object model.

- 5 17. The engine of claim 16, wherein the data structure models the OLAP query in
an abstract form that is compatible with a plurality of different OLAP structured
query formats.
18. The engine of claim 16, wherein the data structure models the OLAP query in
10 a form different from the implementation of underlying OLAP servers.
19. The engine of claim 16, wherein the programming interface is also for
maintaining the OLAP query statement.
- 15 20. The engine of claim 16, wherein the programming interface is also for
executing the OLAP query statement.
21. The engine of claim 16, wherein the query object model is capable of
specifying the MDX and the RS query formats, and the programming interface
20 generates an MDX query statement and an RS query statement when the query object
model specifies the MDX query format and the RS query format, respectively.
22. The engine of claim 16, wherein the query object model is capable of
specifying first, second and third structured query formats, and the programming
25 interface generates the query statement using the first, second and third formats when
the query object model specifies the first, second and third structured query formats,
respectively.
23. An OLAP query object model, comprising:
30 a query object which defines an OLAP query in abstract form; and
a root object including methods for transforming the query object into an
OLAP query statement according to a structured query format specified by the query
object.

- 5 24. The model of claim 23, wherein the query object is capable of specifying the MDX query format and the RS query format, and the root object includes methods for generating an MDX query statement and an RS query statement when the query object specifies the MDX query format and the RS query format, respectively.
- 10 25. The model of claim 23, wherein the query object is capable of specifying first, second and third structured query formats, and the root object includes methods for generating the query statement using the first, second and third structured query formats when the query object specifies the first, second and third structured query formats, respectively.
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26. An OLAP query generation engine for use with an OLAP query and reporting application that supports a first OLAP server using a first structured query format and supports a second OLAP server using a second structured query format, the engine comprising:
- 20 an object model including a data structure that models an OLAP query; and
 a programming interface for generating an OLAP query statement according to the first structured query format when the first structured query format is specified by the object model and according to the second structured query format when the second structured query format is specified.
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27. The engine of claim 26, wherein the query and reporting application supports a Microsoft Analysis Services OLAP server using the MDX query format and an Hyperion Essbase™ OLAP server using the RS query format, and the programming interface generates an MDX query statement and an RS query statement when the
- 30 object model specifies the MDX query format and the RS query format, respectively.
28. The engine of claim 26, wherein the query and reporting application supports first, second and third OLAP servers using first, second and third structured query

5 formats, and the programming interface generates the query statement using the first, second and third structured query formats when the first, second and third structured query formats are specified.

29. A method of generating an OLAP query using a query object capable of
10 supporting a plurality of OLAP servers, each of the OLAP servers using a different structured query format, the method comprising:
determining, based upon a property of the query object, an OLAP server from among the plurality of OLAP servers; and
processing the query object to generate a query statement using the structured
15 query format corresponding to the OLAP server determined.

30. The method of claim 29, wherein the query object supports the Microsoft Analysis Services OLAP server and Hyperion Essbase™ OLAP server, and the processing generates an MDX query statement and an RS query statement when the
20 property indicates that the OLAP server is a Microsoft Analysis Services OLAP server and an Hyperion Essbase™ OLAP server, respectively.

31. The method of claim 29, wherein the query object supports at least three OLAP servers which each uses a different structured query format, and the
25 processing generates the query statement using one of the at least three formats.